CLAIMS

[001] A linear drive device comprising at least one excitation winding for producing a variable magnetic field, comprising a magnetic-flux-guiding main yoke body which accommodates the excitation winding and is provided with limbs, comprising a winding-free counter-yoke body which is located opposite to the main yoke body, wherein an axial gap is provided between the main yoke body and the counter-yoke body, and comprising at least one armature body provided with at least two permanent magnetic magnet parts arranged axially one behind the other and having opposite magnetisation, wherein the armature body is to be set in axially oscillating motion by the magnetic field of the excitation winding in the gap, characterised in that all the limbs (5a to 5c) of the main yoke body (5) have the same axial width (b_j) at their pole surfaces (F_p) facing the armature body (8), wherein neighbouring limbs are each spaced apart from one another axially by the pole surface spacing (b_w) and the axial extension (b_{pm}) of each magnet part (9a, 9b) is at least approximately equal to the sum of a pole surface width (b_j) and a pole surface spacing (b_w).

[002] The drive device according to claim 1, characterised in that the main yoke body (16) comprises pole shoe bodies (17a to 17b) in the area of its pole surfaces (F_p), whose axial extension (d_j) is greater than the corresponding extension (d_w) of the winding windows (4) which hold the excitation winding (3) between the limbs (16a to 16c).

[003] The drive device according to claim 2, characterised in that the pole shoe bodies (17a to 17c) can be placed on the respective limbs (16a to 16c).

[004] The linear drive device comprising at least one excitation winding for producing a variable magnetic field, comprising a magnetic-flux-guiding main yoke body which accommodates the excitation winding and is provided with limbs, comprising a winding-free counter-yoke body which is located opposite

to the main yoke body, wherein an axial gap is provided between the main yoke body and the counter-yoke body, and comprising at least one armature body provided with at least two permanent magnetic magnet parts arranged axially one behind the other and having opposite magnetisation, wherein the armature body is to be set in axially oscillating motion by the magnetic field of the excitation winding in the gap, characterised in that the main yoke body and the counter-yoke body form a common yoke body (20) with common lateral limbs (20a, 20c), wherein the main yoke body has a central limb (20b) which has an axial width (b_{j2}) at its pole surface (F_p) facing the armature body (8), which is at least as large as the axial extension (b_{pm}) of each magnet part (9a, 9b).

[005] The drive device according to claim 4, characterised in that the axial width (b_{j2}) of the central limb (20b) is greater than that of the lateral limbs (20a, 20c).

[006] The drive device according to claim 5, characterised in that the axial width (b_{j3}) of the lateral limbs (20a, 20c) is in each case half as large as that of the central limb (20b).

[007] The drive device according to any one of claims 4 to 6, characterised in that the stroke (H) of the armature part (8) during the oscillating movement is smaller than the corresponding extension (b_w) of each winding window (4) which holds at least one excitation winding (3) between the limbs (20a to 20c).

[008] The drive device according to claim 7, characterised in that the axial extension (b_w) of each winding window (4) is equal to the maximum distance of the pole surfaces (f_p) of the central limn (20b) from the corresponding lateral limbs (20a, 20c).

[009] The drive device according to any one of the preceding claims, characterised in that the counter-yoke body (6) comprises limbs (6a to 6c) having the axial

width (b_j) at the pole surfaces (F_p) corresponding to the limbs (5a, 5c) of the main yoke body (5, 16).

[010] The drive device according to any one of claims 1 to 8, characterised in that the counter-yoke body (13) is embodied as plate-shaped or rectangular.

[011] The linear drive according to any one of the preceding claims, characterised in that the axial width (b_j) of the at least one pole surface is approximately equal to the stroke (H) of the armature body (8) during the oscillating movement.

[012] The device according to any one of the preceding claims, characterised in that the magnet parts (9a, 9b) are embodied as plate- or strip-shaped.

[013] The device according to any one of the preceding claims, characterised in that the armature body (8) is rigidly connected to a pump piston (11) of a compressor (V).